FACT SHEET

The United States Environmental Protection Agency (EPA)
Plans To Reissue A
National Pollutant Discharge Elimination System (NPDES) Permit To:

The City of New Plymouth
4615 NE 1st Ave
New Plymouth, Idaho 83661

Permit Number: ID-002038-9
Public Notice start date: July 18, 2001
Public Notice expiration date: September 4, 2001

Technical Contact

Name: Madonna Narvaez
Phone: (206) 553-1774
1-800-424-4372 ext. 1774 (within Alaska, Idaho, Oregon, and Washington)
Email: narvaez.madonna@epa.gov

EPA Proposes NPDES Permit Reissuance.

EPA proposes to reissue an NPDES permit to the City of New Plymouth. The draft permit places conditions on the discharge of pollutants from the facility to the Payette River. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a description of the current discharge
- a listing of proposed effluent limitations and other conditions
- a map showing the location of the wastewater treatment plant discharge
- detailed technical material supporting the conditions in the permit

The State of Idaho Certification.

EPA is requesting that the Idaho Department of Environmental Quality certify the NPDES permit for City of New Plymouth, under section 401 of the Clean Water Act.

Public Comment.

Persons wishing to comment on or request a Public Hearing for the draft permit may do so in writing by the expiration date of the Public Notice. A request for a Public Hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for Public Hearings must be in writing and should be submitted to EPA as described in the Public Comments Section of the attached Public Notice.

All written comments and requests should be submitted to the attention of the Director, Office of Water at the following address:

U.S. EPA, Region 10
Re: City of New Plymouth
1200 Sixth Avenue, M/S OW-130
Seattle, Washington 98101

Comments may also be submitted electronically to the technical contact listed above.

After the Public Notice expires, and all comments have been considered, EPA's Director for the Office of Water in Region 10 will make a final decision regarding permit re-issuance. If no significant comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If comments are received, EPA will address the comments and issue the permit. The permit will become effective 30 days after the issuance date, unless the permit is appealed to the Environmental Appeals Board within 30 days.

Persons wishing to comment on State Certification should submit written comments by the end date of this public comment period to the Regional Administrator, with a copy to EPA, at the following address:

Regional Administrator, State of Idaho
Department of Environmental Quality
Boise Regional Office
1445 N. Orchard
Boise, Idaho 83706-2239

Documents are Available for Review.
The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday (See address below). Draft permits, Fact Sheets, and other information can also be found by visiting the Region 10 website at www.epa.gov/r10earth.

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OW-130
Seattle, Washington 98101
(206) 553-1774 or
1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The Fact Sheet and draft permit are also available at:

EPA Idaho Operations Office
1435 North Orchard Street
Boise, Idaho 83706
(208) 378-5746

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I. APPLICANT

City of New Plymouth
NPDES Permit No.: ID-002038-9

Facility Mailing Address:
P.O. Box 158
New Plymouth, Idaho 83655

II. FACILITY INFORMATION

A. Treatment Plant Description

The City of New Plymouth owns, operates, and has maintenance responsibility for a facility which treats domestic sewage from local residents and commercial establishments. The facility's application indicates that the design flow of the facility is 0.6 million gallons per day (mgd). From 1998 through 2000 the facility's average monthly discharge has been between 0.31 mgd and 0.40 mgd. Domestic wastewater is treated in a series of four waste stabilization lagoons. Discharge typically occurs in the months of June – November annually during the irrigation season. Effluent is not chlorinated prior to discharge. Domestic sludge has accumulated in the bottom of the lagoons and removal has not been required to date.

B. Background Information

The NPDES permit for the wastewater treatment plant expired on August 12, 1991. Under federal law, specifically, the Administrative Procedures Act (APA), a federally issued NPDES permit is administratively extended (i.e., continues in force and effect) provided that the permittee submits a timely and complete application for a new permit prior to the expiration of the current permit. Since the City did submit a timely application (Standard Form A) that was received by EPA on November 29, 1990 for a new permit, the current permit was administratively extended. The City of New Plymouth subsequently filed a General Form 1 and NPDES Form 2A that was received by EPA on June 16, 2000. This updated application was requested by EPA on May 24, 2000.

A review of the facility's Discharge Monitoring Reports[1] for the past five years indicates that the facility has generally been in compliance with its permit effluent limits during the past 2 years. Four pH excursions were reported in 1996, three fecal coliform excursions were reported in 1997, and two pH excursions were reported in 1998.

[1] Discharge monitoring reports are forms that the facility uses to report the results of monitoring the facility has done in compliance with their NPDES permit.

III. RECEIVING WATER

A. Outfall location/ Receiving Water

The treated effluent from the City of New Plymouth wastewater treatment facility is discharged from Outfall 001, located at latitude 43° 59' 11" and longitude 116° 48' 13", to the Payette River at approximately River Mile 11.

Flow information was not available to determine the 1Q10[2] or the 7Q10[3] flows at New Plymouth; however, flow information was available for the Payette River near the City of Fruitland located at River Mile 3.9. The 1Q10 and 7Q10 for the Payette River at this location are 315 cubic feet per second (cfs) and 445 cfs, respectively. Therefore, these flows will be used to determine if water quality based effluent limitations are required for this discharge.

B. Water Quality Standards

A State's water quality standards are composed of use classifications, numeric and/or narrative water quality criteria, and an anti-degradation policy. The use classification system designates the beneficial uses (such as cold water aquatic life communities, contact recreation, etc.) that each water body is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary, by the State, to support the beneficial use classification of each water body. The anti-degradation policy represents a three tiered approach to maintain and protect various levels of water quality and uses.

The Idaho *Water Quality Standards and Wastewater Treatment Requirements* (IDAPA 58.01.02.140.16) protect the Payette River for the following beneficial use classifications: cold water aquatic life communities, salmonid spawning, primary contact recreation, and domestic water supply.

The criteria that the State of Idaho has deemed necessary to protect the beneficial uses for the Payette River, and the State's anti-degradation policy are summarized in Appendix A.

Oregon Water Quality Standards: The federal regulation at 40 CFR 122.4 states: "No permit may be issued when the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected states."

The mid-point of the Snake River is the boundary between the states of Idaho and Oregon. Since the New Plymouth Wastewater Treatment Plant discharges to the Payette River at River Mile 11, it is possible that the effluent discharged from the facility may affect the water quality of Snake River in Oregon. Therefore, Oregon state water quality standards must be considered when developing effluent limits.

The *Oregon Water Quality Standards and Beneficial Uses* (Oregon Administrative Code 340-041) classify this section of the Snake River for the following beneficial uses: public and private drinking water supply, industrial

[2] The 1Q10 represents the lowest daily flow that is expected to occur once in ten years.
[3] The 7Q10 represents the lowest weekly flow that is expected to occur once in ten years.

water supply, irrigation, livestock watering, salmonid fish rearing (trout), salmonid fish spawning (trout), resident fish (warm water) and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality.

In general, the Idaho water quality criteria will be protective of the beneficial uses established by Oregon, with the following exceptions: Oregon's standard for pH is more stringent, and its designation of salmonid spawning as a beneficial use of the river requires more stringent dissolved oxygen and temperature criteria. However, since the effluent from the New Plymouth Wastewater Treatment Plant will be significantly diluted before reaching the Oregon side of the Snake River, it is anticipated that the effluent will not effect the Oregon water quality standards. Therefore, only Idaho water quality standards will be considered when developing effluent limits.

C. Water Quality Limited Segment

A water quality limited segment is any waterbody, or definable portion of water body, where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards. The Payette River has been listed as a water quality limited segment. This section of the river has been listed as water quality limited for bacteria, nutrients, and temperature. In the State of Oregon this section of the Snake River has been listed as water quality limited for temperature and toxics (mercury).

Section 303(d) of the Clean Water Act (CWA) requires States to develop a Total Maximum Daily Load (TMDL) management plan for water bodies determined to be water quality limited. A TMDL documents the amount of a pollutant a waterbody can assimilate without violating a state's water quality standards and allocates that load to known point sources and nonpoint sources. The Idaho Department of Environmental Quality (IDEQ) issued an amendment to the Payette River TMDL on May 11, 2000 which was subsequently approved by EPA Region 10 on May 31, 2000. This amended TMDL addresses bacteria issues related to this section of the Payette River. A TMDL for nutrients for this lower portion of the Payette River is planned once a TMDL for upstream reaches is completed.

Neither the Idaho Department of Environmental Quality (IDEQ) nor the Oregon Department of Environmental Quality (ODEQ) has established a TMDL for this portion of the Snake River. However, the IDEQ is scheduled to complete a TMDL by December 2001, and the ODEQ is scheduled to complete a TMDL in 2005.

IV. EFFLUENT LIMITATIONS

In general, the Clean Water Act requires that the effluent limits for a particular pollutant be the more stringent of either technology-based effluent limits or water quality-based limits. A technology based effluent limit requires a minimum level of treatment for municipal point sources based on currently available treatment technologies. A water quality based effluent limit is designed to ensure that the water quality standards of a waterbody are being met. For more information on deriving technology-based effluent limits and water quality-based effluent limits see Appendix C. The following summarizes the proposed effluent limitations that are in the draft permit.

A. The pH range shall be between 6.5 - 9.5 standard units.

B. Removal Requirements for BOD_5: For any month, the monthly average effluent BOD_5 load shall not exceed 35 percent of the monthly average influent BOD_5 load when the influent BOD_5 concentration is equal to or greater than 45 mg/L.

C. There shall be no discharge of floating solids or visible foam other than in trace amounts.

D. Table 1, below, presents the proposed effluent limits for BOD_5 and TSS which are continued from the existing permit. The pH has been changed to a range of 6.5 – 9.5 to be consistent with State water quality standards. Monitoring requirements are proposed for total ammonia, nitrate-nitrite nitrogen, total kjeldahl nitrogen, total phosphorus, and E. coli bacteria. Monitoring requirements for total ammonia, nitrate-nitrite nitrogen, total kjeldahl nitrogen, total phosphorus have been included to assist IDEQ in development of the TMDL. The total residual chlorine limit has been removed from the permit since the effluent is not chlorinated prior to discharge.

Table 1 Effluent and Monitoring Limitations for Outfall 001

PARAMETER	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS[1]		
	Average Monthly Limit	Average Weekly Limit	Daily Maximum Limit	Sample Location	Sample Frequency	Sample Type
Flow, MGD	Report	---	Report	Influent or effluent	Continuous	Recording
Biological Oxygen Demand (BOD_5)	30 mg/l	45 mg/l	---	Influent and Effluent	1/month	grab
	150 lb/day	225 lb/day	---			
Total Suspended Solids	70 mg/l	105 mg/l	---	Effluent	1/month	grab
	350 lb/day	525 lb/day	---			
Fecal Coliform Bacteria **May 1 – September 30**	50/100 ml	200/100 ml	---	Effluent	1/week	grab
Fecal Coliform Bacteria **October 1 – April 30**	---	200/100 mL[3]	---	Effluent	1/week	grab
E. coli Bacteria[2] Organisms/100 ml	126[4]	—	406[4a]	Effluent	1/month	grab
Total Ammonia as N, mg/L	---	---	Report	Effluent	1/ month [5]	grab
Nitrate-Nitrite Nitrogen, mg/L	---	---	Report	Effluent	1/ month [5]	grab
Total Kjeldahl Nitrogen, mg/	---	---	Report	Effluent	1/ month [5]	grab

Table 1 Effluent and Monitoring Limitations for Outfall 001						
PARAMETER	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS[1]		
	Average Monthly Limit	Average Weekly Limit	Daily Maximum Limit	Sample Location	Sample Frequency	Sample Type
Total Phosphorus, mg/l	---	---	Report	Effluent	1/ month [5]	grab
Orthophosphorous, mg/L	---	---	Report	Effluent	1/month[5]	
Mercury[6]	—	—	Report	Effluent	1/ month [5]	grab

1 Effluent monitoring is only required when there is a discharge to the Payette River.
2 Reporting is required within 24 hours of a maximum daily limit violation.
3 The average weekly fecal coliform count must not exceed a geometric mean of 200/100 ml based on a minimum of five (5) samples per week.
4 A geometric mean of 126 organisms per 100 ml must be based on a minimum of 5 samples taken every 3 to 5 days over a thirty day period.
4a This is based on a single sample.
5 Monitor parameter 1/month of discharge until 24 monthly results are obtained.
6 Mercury must be analyzed as total and methods which achieve a method detection limit of at least 0.001 ug/L must be used. Monitoring for mercury shall continue until 12 monthly samples (per month of discharge) have been collected and analyzed.

V. SLUDGE REQUIREMENTS

The biosolids management regulations at 40 CFR §503 were designed so that the standards are directly enforceable against most users or disposers of biosolids, whether or not they obtain an NPDES permit. Therefore, the publication of Part 503 in the *Federal Register* on February 19, 1993 served as notice to the regulated community of its duty to comply with the requirements of the rule, except those requirements that indicate that the permitting authority shall specify what has to be done.

Requirements are included in Part 503 for pollutants in biosolids, the reduction of pathogens in biosolids, the reduction of the characteristics in biosolids that attract vectors, the quality of the exit gas from a biosolids incinerator stack, the quality of biosolids that is placed in a municipal solid waste landfill (MSWLF) unit, the sites where biosolids are either land applied or placed for final disposal, and for a biosolids incinerator.

Even though Part 503 is self-implementing, Section 405(f) of the CWA requires the inclusion of biosolids use or disposal requirements in any NPDES permit issued to a Treatment Works Treating Domestic Sewage (TWTDS). In addition, the biosolids permitting regulations in 40 CFR §122 and §124 have been revised to expand its authority to issue NPDES permits with these requirements. This includes all biosolids generators, biosolids treaters and blenders, surface disposal sites and biosolids incinerators. In the future, EPA Region 10 will be issuing a separate NPDES general permit which deals only with the use and disposal of biosolids. Facilities that generate biosolids, including the City of New Plymouth, will be required to be covered under the biosolids general permit. As mentioned earlier, even though the permittee does not presently have a permit for biosolids use or disposal, the Permittee is responsible for complying with the requirements of 40 CFR 503.

Presently, the permittee accumulates biosolids in the sewage lagoons. The draft permit requires the permittee to comply with 40 CFR Part 503 in the event that any biosolids are removed from the sewage lagoons.

VI. MONITORING REQUIREMENTS

Section 308 of the Clean Water Act and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality. The Permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports to EPA.

In a letter dated December 27, 1999, the Idaho Department of Environmental Quality recommended that monitoring for nitrate-nitrite nitrogen, total kjeldahl nitrogen, and total phosphorus be included in the draft permit to support the development of the TMDL for nutrients for the Payette River. Monitoring for these parameters have been included in the draft permit at a frequency of once per month of discharge for twelve months.

Table 1 above shows the proposed effluent monitoring requirements. Effluent monitoring for Outfall 001 is required only when the facility is actually discharging to the Payette River.

Monitoring for nitrate-nitrite, total kjeldahl nitrogen, and total phosphorus have been included in the draft permit to support the development of the TMDL for the Snake River. Monitoring for mercury is to support future development of a TMDL in the Snake River for mercury, based on Oregon water quality standards. Because the City of New Plymouth has not previously conducted surface water monitoring, monitoring must continue until 24 monthly samples per parameter have been collected and analyzed. Monitoring for mercury continue until 12 monthly samples have been collected and analyzed.

Table 2: Surface Water Monitoring Parameter, Locations, and Method Detection Limits

Parameter	Units	Upstream Sampling Frequency	Downstream Sampling Frequency	Method Detection Limit (MDL)
Flow	mgd	1/month	-----	-----
BOD_5	mg/L	[1]	-----	-----
TSS	mg/L	[1]	-----	-----
Fecal Coliform Bacteria	colonies/100 ml	[1]	-----	-----
E. coli bacteria	colonies/100 ml	[1]	-----	-----
Dissolved Oxygen	mg/L	[1]	[1]	-----
Total Phosphorus	mg/L	[1]	[1]	-----
Ortho-phosphorus	mg/L	[1]	[1]	-----
Total Ammonia as N	mg/L	[1]	[1]	----

Table 2: Surface Water Monitoring Parameter, Locations, and Method Detection Limits				
Parameter	Units	Upstream Sampling Frequency	Downstream Sampling Frequency	Method Detection Limit (MDL)
Total Kjeldahl Nitrogen	mg/L	[1]	[1]	-----
Nitrate-Nitrite	mg/L	[1]	[1]	-----
Temperature	°C	[1]	[1]	-----
pH	standard units	[1]	[1]	-----
Mercury	: g/L	[2]	-----	.001 : g/L

1 Monitoring must be conducted during the months of June through November when there is a discharge, until 12 separate samples have been collected.
2 Mercury must be analyzed as total. Mercury shall be monitored quarterly until a total of ten (12) separate samples have been collected.

VII. OTHER PERMIT CONDITIONS

A. Quality Assurance Plan

The federal regulation at 40 CFR 122.41(e) requires the Permittee to develop and submit a Quality Assurance Plan to ensure that the monitoring data submitted is accurate and to explain data anomalies if they occur. The Permittee is required to complete a Quality Assurance Plan within 120 days of the effective date of the final permit and to certify completion of the plan to EPA. The Quality Assurance Plan must consist of standard operating procedures the Permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting.

B. Additional Permit Provisions

Sections II, III, and IV of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because they are regulations, they cannot be challenged in the context of an NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

VIII. OTHER LEGAL REQUIREMENTS

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service if their actions could adversely affect any threatened or endangered species. EPA has determined that issuance of this permit will not affect any of the endangered species that may occur in the vicinity of the discharge. See Appendix C for further details.

B. State Certification

Section 401 of the Clean Water Act requires EPA to seek state certification before issuing a final permit. As a result of the certification, the state may require more

stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards.

C. Permit Expiration

This permit will expire five years from the effective date of the permit.

APPENDIX A

WATER QUALITY STANDARDS

I. Water Quality Criteria

For the City of New Plymouth discharge, the following water quality criteria are necessary for the protection of the beneficial uses of the Payette River:

A. IDAPA 58.01.02.200.02 - Surface waters of the State must be free from toxic substances in concentrations that impair designated beneficial uses. Furthermore, IDAPA 58.01.02.210.01 incorporates the National Toxics Rule by reference as found in 40 CFR 131.36(b)(1) that includes numeric criteria for toxic substances.

B. IDAPA 58.01.02.200.05 - Surface waters of the State must be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses.

C. IDAPA 58.01.02.250.01.a. - Hydrogen ion concentration (pH) values within the range of 6.5 to 9.5 standard units.

D. IDAPA 58.01.02.250.01 c. – The one-hour average total residual chlorine concentration must not exceed 19 ug/L, and the four-day average total residual chlorine concentration must not exceed 11 ug/L.

E. IDAPA 58.01.02.250.02.b. – Water temperatures of 22 degrees C or less with a maximum daily average of no greater than 19 degrees C.

II. Anti-Degradation Policy

The State of Idaho has adopted an anti-degradation policy as part of their water quality standards. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses. The three tiers of protection are as follows:

A. Tier 1 – **Maintenance of Existing Uses for all Waters -** The existing in stream uses and the level of water quality necessary to protect the existing uses must be maintained and protected.

B. Tier 2 **– High Quality Water –** Where the quality of the water exceeds levels necessary to support propagation of fish, shellfish and wildlife and recreation in and on the water, that quality must be maintained and protected unless the Department finds, after full satisfaction on the intergovernmental coordination and public participation provisions of the Department's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the Department must assure water quality adequate to protect existing uses fully.

C. **Tier 3 - Outstanding Resource Waters –** Where high quality waters constitute an outstanding natural resource, such as waters of national and state parks and wildlife refuges, and waters of exceptional recreational or ecological significance,

that water must be maintained and protected from the impacts of point and nonpoint source activities.

The Payette River is a Tier 2 waterbody, therefore, water quality should be such that it results in no mortality and no significant growth or reproductive impairment of resident species. An NPDES permit cannot be issued that would result in the water quality criteria being violated. The draft permit contains effluent limits which ensures that the existing beneficial uses for the Payette River will be maintained.

APPENDIX B
Basis for Effluent Limitations

The CWA requires Publicly Owned Treatment Works to meet performance-based requirements (also known as technology based effluent limits) based on available wastewater treatment technology. EPA may find, by analyzing the effect of an effluent discharge on the receiving water, that technology based effluent limits are not sufficiently stringent to meet water quality standards. In such cases, EPA is required to develop more stringent, water quality-based effluent limits designed to ensure that water quality standards are met. The draft effluent limits reflect whichever limits (technology-based or water quality-based) are more stringent. The following explains in more detail the derivation of technology based effluent limits and water quality based effluent limits.

I. Technology-Based Effluent Limitations

On September 20, 1984, EPA revised the Secondary Treatment Regulations (40 CFR 133.102) for facilities that use trickling filters or waste stabilization ponds as the principal process. These revisions established effluent limitations for Treatment Equivalent to Secondary Treatment (40 CFR 133.105). Furthermore, the State of Idaho has adjusted the suspended solids effluent limitations for waste stabilization ponds in accordance with 40 CFR 133.103(c) (IDAPA 58.01.01.420.02.b.ii). The resulting minimum discharge requirements for waste stabilization ponds in Idaho are summarized in the table below:

Parameter	**Average Monthly**	**Average Weekly**	**Percent Removal**
Biochemical Oxygen Demand (5-day), mg/L	45	65	65
Suspended Solids, mg/L	70	105*	65*
Although not specified in IDAPA 58.01.02.420.02.b.ii, a weekly average effluent limitation for suspended solids has been established in accordance with 40 CFR 122.45(d)(2), and continues this weekly average limit from the existing permit. In accordance with 40 CFR § 133.105(b)(3), percent removal has been added for suspended solids.			

Discharge Monitor Report (DMR) data for the past two years indicates that the facility is able to meet more stringent effluent limitations for BOD_5 that those established above. Therefore, BOD_5 effluent limitations more stringent than Treatment Equivalent to Secondary Treatment are required, in accordance with 40 CFR 133.105(f)(1), based on past performance of the facility. The proposed effluent limits for BOD_5 and TSS are as follows:

Parameter	Monthly Average	Weekly Average	Percent Removal
Biochemical Oxygen Demand, (5-day) mg/L	30	45	65
Total Suspended Solids, mg/L	70	105	65

EPA methodology and regulations at 40 CFR 122.45(b) and 122.45(f) require BOD_5 and TSS limitations to be expressed as mass based limits using the design flow (0.6 mgd) of the facility. The loading is calculated as follows: concentration X design flow X 8.34. Using this formula the BOD_5 and TSS permit limits are:

BOD_5 loading, monthly average = 30 mg/L X 0.6 MGD X 8.34 = 150 lbs/day
BOD_5 loading, weekly average = 45 mg/L X 0.6 MGD X 8.34 = 225 lbs/day
TSS loading, monthly average = 70 mg/L X 0.6 MGD X 8.34 = 350 lbs/day
TSS loading, weekly average = 105 mg/L X 0.6 MGD X 8.34 = 525 lbs/day

Federal regulations at 40 CFR § 133.102(c) require the pH to be in the range of 6.0 to 9.0 S.U. Evaluation of compliance data show that the facility is able to meet this requirement. The limits in the permit are based on the more stringent of the water quality criteria (6.5 - 9.5) and technology-based limits and are 6.5 to 9.0 S.U.

II. Water Quality-Based Evaluation

A. Statutory Basis for Water Quality-Based Limits

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards by July 1, 1977. Discharges to state waters must also comply with limitations imposed by the state as part of its certification of NPDES permits under section 401 of the CWA.

The NPDES regulation (40 CFR 122.44(d)(1)) implementing section 301 (b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters which "are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality."

The regulations require that this evaluation be made using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that water quality standards are met, and must be consistent with any available wasteload allocation.

B. Reasonable Potential Determination

When evaluating the effluent to determine if water quality-based effluent limits are needed based on chemical specific numeric criteria, a projection of the receiving water concentration (downstream of where the effluent enters the receiving water) for each pollutant of concern is made. The chemical specific concentration of the effluent and ambient water and, if appropriate, the dilution available from the ambient water are factors used to project the receiving water concentration. If the projected concentration of the receiving water exceeds the numeric criterion for a specific chemical, then there is a reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standard, and a water quality-based effluent limit is required.

As mentioned above, sometimes it is appropriate to allow a small area of ambient water to provide dilution of the effluent. These areas are called mixing zones.

Mixing zone allowances will increase the mass loading of the pollutant to the water body, and decrease treatment requirements. Mixing zones can be used only when there is adequate ambient flow volume and the ambient water is below the criteria necessary to protect designated uses.

1. Procedure for Deriving Water Quality-Based Effluent Limits

The first step in developing a water quality based permit limit is to develop a wasteload allocation for the pollutant. A wasteload allocation is the concentration (or loading) of a pollutant that the Permittee may discharge without causing or contributing to an exceedance of water quality standards in the receiving water. Wasteload allocations are determined in one of the following ways:

a. TMDL-Based Wasteload Allocation

Where the receiving water quality does not meet water quality standards, the wasteload allocation is generally based on a TMDL developed by the State. A TMDL is a determination of the amount of a pollutant from point, non-point, and natural background sources, including a margin of safety, that may be discharged to a water body without causing the water body to exceed the criterion for that pollutant. Any loading above this capacity risks violating water quality standards.

Section 303(d) of the CWA requires states to develop TMDLs for water bodies that will not meet water quality standards after the imposition of technology-based effluent limitations to ensure that these waters will come into compliance with water quality standards. The first step in establishing a TMDL is to determine the assimilative capacity (the loading of pollutant that a water body can assimilate without exceeding water quality standards). The next step is to divide the assimilative capacity into allocations for non-point sources (load allocations), point sources (wasteload allocations), natural background loadings, and a margin of safety to account for any uncertainties. Permit limitations are then developed for point sources that are consistent with the wasteload allocation for the point source.

A TMDL has been completed for bacteria for this section on the Payette River.

b. Mixing zone based WLA

When the State authorizes a mixing zone for the discharge, the WLA is calculated by using a simple mass balance equation. The equation takes into account the available dilution provided by the mixing zone, and the background concentrations of the pollutant.

c. Criterion as the Wasteload Allocation:

In some cases a mixing zone cannot be authorized, either because the receiving water already exceeds the criteria or the receiving water flow is too low to provide dilution. In such cases, the criterion becomes the

wasteload allocation. Establishing the criterion as the wasteload allocation ensures that the Permittee will not contribute to an exceedance of the criteria.

Once the wasteload allocation has been developed, the EPA applies the statistical permit limit derivation approach described in Chapter 5 of the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001, March 1991, hereafter referred to as the TSD) to obtain monthly average, and weekly average or daily maximum permit limits. This approach takes into account effluent variability, sampling frequency, and water quality standards.

C. Water Quality-Based Effluent Limits

1. Toxic Substances

The Idaho water quality standards require surface waters of the state to be free from toxic substances in concentration that impair designated uses. This application was not screened against the toxic substances found in the National Toxics Rule since the City of New Plymouth was not required to submit Expanded Effluent Testing Data or Toxicity Testing Data because of a treatment plant design flow less than 1.0 MGD.

2. Floating, Suspended or Submerged Matter

The Idaho water quality standards require surface waters of the state to be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses. Therefore, the draft permit specifies that there shall be no discharge of floating solids or visible foam in other than trace amounts.

3. Excess Nutrients

The Idaho water quality standards require surface waters of the state be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses. The Payette River has been listed as water quality limited for nutrients. As of this date a TMDL has not been established for this portion of the river. Nutrient monitoring has been incorporated into the draft permit. The results of this monitoring will be used in the development of the TMDL. A reopener clause has also been incorporated into the draft permit to allow the permit to be reopened to incorporate the determinations made in the TMDL.

4. E. coli Bacteria

The Payette River is listed as water quality limited for bacteria. A TMDL for bacteria has been completed for the waterbody which indicates that the overall contribution by municipal wastewater treatment plants is minimal. The highest average annual flow from the City of New Plymouth during the past two years is 0.40 mgd (0.6 cfs) versus receiving stream 1Q10 and

7Q10 flows of 315 cfs and 445 cfs, respectively. Therefore, a monthly E. coli monitoring requirement has been added to the permit.

Total residual chlorine limits are not included in the draft permit since the City of New Plymouth does not chlorinate effluent discharges from the lagoons. The holding time in the lagoons is sufficient to reduce pathogens to acceptable levels.

5. pH

The Idaho state water quality standards require surface waters of the state to have a pH value within the range of 6.5 - 9.5 standard units. These minimum pH value has been included in the permit. The maximum value of 9.0 S.U. is included based on technology-based limitations.

6. Dissolved Oxygen

Discharges from the City of New Plymouth are not expected to have an appreciable effect on the dissolved oxygen concentration in the Payette River. BOD_5 limitations have been included in the permit to control the discharge of oxygen demanding constituents into the Payette River.

7. Ammonia

IDEQ has developed water quality criteria to protect aquatic life against short term and long term adverse impacts from ammonia using the equations found in IDAPA 58.01.02.250.02.c.i (1-hour average) and IDAPA 58.01.02.250.02.c.ii (4-day average).

Using EPA's STORET database, pH values were obtained from Station EMM025 located on the Payette River at the Letha bridge, and temperature data were obtained from Station 13249500 located on the Payette River near the City of Emmett. This was the best pH and temperature data available for this portion of the Payette River.

Using the 95th percentile pH and temperature (8.3 standard units and 21.0 °C, respectively) the 1-hour average unionized ammonia criterion is 0.22 mg/L and the total ammonia criterion is 3.4 mg/L.

Using the 95th percentile pH and temperature (8.3 standard units and 21.0 °C, respectively) the 4-day average unionized ammonia criterion is 0.035 mg/L and the total ammonia criterion is 0.56 mg/L

The following reasonable potential analysis was completed which shows that effluent limitations for total ammonia are not required in the permit.

Total Ammonia Reasonable Potential Analysis

In the case of the Payette River the beneficial use that needs to be protected is cold water aquatic life. The acute criterion for ammonia is 3.4 mg/L and the chronic criterion is 0.56 mg/L. The acute criterion protects against short term impacts to aquatic life, and the chronic criterion protects against long term impacts to aquatic life.

When evaluating the effluent to determine if a water quality based effluent limit (WQBEL) is needed based on chemical specific numeric criteria, a projection of the receiving water concentration (downstream of where the effluent enters the receiving water) for the pollutant of concern is made. If the projected concentration of the receiving water exceeds the applicable numeric criterion, then there is a reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standards, and a WQBEL is required.

The following mass balance equation is used to determine the downstream receiving water concentration:

$$C_d = \frac{(C_e \text{ X } Q_e) + (C_u \text{ X } (Q_u \text{ X } \%MZ))}{Q_e + (Q_u \text{ X } \%MZ)}$$

where,
C_d = receiving water concentration downstream of the effluent discharge
C_e = maximum projected effluent concentration = 0.16 mg/L (See Below)
Q_e = maximum effluent flow = 0.6 mgd (From 6/16/2000 Application)
C_u = upstream concentration of pollutant = Assume 0.0 (No Data)
Q_u = upstream flow = 315 mgd (1Q10)
%MZ = assume 25 percent mixing zone is authorized by the IDEQ

When determining the projected receiving water concentration, EPA's *Technical Support Document for Water Quality-based Toxics Controls* (TSD, 1991) recommends using the maximum projected effluent concentration. To determine the maximum projected effluent concentration (C_e) EPA has developed a statistical approach to better characterize the effects of effluent variability. The approach combines knowledge of effluent variability as estimated by a coefficient of variation (CV) with the uncertainty due to a limited number of data to project an estimated maximum concentration for the effluent. Once the CV has been calculated, the reasonable potential multiplier used to derive the maximum projected effluent concentration (C_e) can be found in Table 3-1 of EPA's TSD. A reasonable potential multiplier may vary from a low of 1 to 368.

The maximum projected concentration (Ce) for the effluent is equal to the highest observed concentration value of the data set multiplied by the maximum projected concentration. Data from the June 16, 2000 application indicate a maximum ammonia (as N) calculation of 0.08 with a CV = 0.2. The reasonable potential multiplier is 2.0. The maximum projected concentration (Ce) is 0.16 mg/L (0.08 mg/L X 2.0).
The downstream receiving water concentration (Cd) using the 1Q10 flow is:

$$C_d = \frac{(C_e \text{ X } Q_e) + (C_u \text{ X } (Q_u \text{ X } \%MZ))}{Q_e + (Q_u \text{ X } \%MZ)}$$

$$C_d = \frac{(0.16 \text{ X } 0.6) + (0.0 \text{ X } (315 \text{ X } 0.25)}{0.6 + (315 \text{ X } 0.25)} = \frac{0.096}{79.4} = 0.001 \text{ mg/L}$$

The projected concentration downstream does not exceeds the acute criterion for total ammonia of 3.4 mg/L; therefore, a water quality based effluent limit is not required. The downstream receiving water concentration (Cd) using the 7Q10 flow is:

$$C_d = \frac{(C_e \text{ X } Q_e) + (C_u \text{ X } (Q_u \text{ X } \%MZ))}{Q_e + (Q_u \text{ X } \%MZ)}$$

$$C_d = \frac{(0.16 \text{ X } 0.6) + (0.0 \text{ X } (445 \text{ X } 0.25)}{0.6 + (445 \text{ X } 0.25)} = \frac{0.096}{111.9} = 0.0009 \text{ mg/L}$$

The projected concentration downstream does not exceeds the chronic criterion for total ammonia of 0.56 mg/L; therefore, a water quality based effluent limit is not required.

Monitoring is proposed for total ammonia at a frequency of once per month for 12 months to provide data for the development of a TMDL for nutrients for the Payette River.

APPENDIX C
ENDANGERED SPECIES ACT

Section 7 of the Endangered Species Act (ESA) requires federal agencies to request a consultation with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) regarding potential effects an action may have on listed endangered species.

The USFWS website for Payette County, Idaho identified the gray wolf and bald eagle as being federally-listed threatened species occurring in Payette County, Idaho (the location of the Payette discharge). This list has not changed according to the updated species list (1-4-01-SP-827) dated June 1, 2001.

EPA has determined that the requirements contained in the draft permit will not have an impact on the gray wolf and bald eagle. The gray wolf is included on the list as an experimental and non-essential population in the area. Habitat management plans are not developed for these populations. Hunting and habitat destruction are the primary causes of declines of the gray wolf. Issuance of the draft NPDES permit for City of New Plymouth wastewater treatment plant will not result in habitat destruction, nor will it result in changes in population that could result in increased habitat destruction. Furthermore, issuance of this draft permit will not impact the food sources of the gray wolf.

The primary reasons for the decline of the bald eagle are destruction of their habitat and food sources and widespread historic application of DDT. This permit will not impact any of these issues.

Therefore, EPA has determined that issuance of this permit will **not affect** any of the endangered species that may occur in the vicinity of the discharge.

APPENDIX D

MAP OF WASTEWATER TREATMENT PLANT LOCATION

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